HP StorageWorks 4000/6000/8000 Enterprise Virtual Array connectivity for Windows installation and reference guide

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About this guide

This guide provides information about:

- Connecting your host to an Enterprise Virtual Array (EVA) storage system
- Getting pointers to the latest layered applications used with the EVA storage system

Intended audience

This guide is intended for use by storage administrators who are experienced with the following:

- Host environments, such as Windows 2000, Windows NT , Windows Server 2003, Sun Solaris, OpenVMS, Tru64 UNIX HP-UX, IBM AIX, Linux , Novell NetWare, Windows XP Professional x32
- HP StorageWorks 4000/6000/8000 Enterprise Virtual Array (EVA4000/6000/8000) storage systems

Overview

- Intended audience
- Related documentation

Related documentation

In addition to this guide, HP provides the following corresponding information:

- *HP StorageWorks 4000/6000/8000 Enterprise Virtual Array connectivity for Windows release notes*
- *HP StorageWorks Storage System Scripting Utility reference guide*
- *HP StorageWorks Command View EVA online help*
- *HP StorageWorks Command View EVA user guide*

Conventions

Document conventions

This document follows the conventions in Table 1.

Table 1 Document conventions

Convention	Element
Medium blue text: Related documentation	Cross-reference links and e-mail
Medium blue, underlined text (http://www.hp.com)	Website addresses
Bold font	• Key names • Text typed into a GUI element, such as into a box • GUI elements that are clicked or selected, such as menu and list items, buttons, and check boxes
Italics font	Text emphasis
`Monospace font`	• File and directory names • System output • Code • Text typed at the command-line
`Monospace, italic font`	• Code variables • Command-line variables
`Monospace, bold font`	Emphasis of file and directory names, system output, code, and text typed at the command line

Text symbols

The following symbols may be found in the text of this guide. They have the following meanings:

△ CAUTION:

Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

NOTE:

Text set off in this manner presents commentary, sidelights, or interesting points of information.

Getting help

If you still have a question after reading this guide, contact an HP authorized service provider or access our website: http://www.hp.com.

HP technical support

Telephone numbers for worldwide technical support are listed on the following HP website: http://www.hp.com/support/. From this website, select the country of origin.

NOTE:

For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers

- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Storage website

The HP website has the latest information on this product, as well as the latest drivers. Access storage information at the following website: http://www.hp.com/country/us/eng/prodserv/storage.html. From this website, select the appropriate product or solution.

HP authorized reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the HP website for locations and telephone numbers: http://www.hp.com.

1 Host connectivity

This chapter provides host connectivity information and links to components you need to support your operating system with an EVA4000/6000/8000 storage system. It is important that you install the components in the following order:

- Installing the Fibre Channel adapter
- Downloading Fibre Channel adapter firmware
- HP StorageWorks Command View EVA and the Storage System Scripting utility
- Working with clusters

Installing the Fibre Channel adapter

Supported Fibre Channel adapters (FCAs) must be installed in the host server in order to communicate with the EVA.

NOTE:

Traditionally, the adapter used to connect the host server to the fabric is called a host bus adapter (HBA). The server HBA used with the EVA4000/6000/8000 is called a Fibre Channel adapter (FCA). You may also see the adapter referred to as a Fibre Channel host bus adapter (FC HBA) in other related documents.

Follow the hardware installation rules and conventions for your server type. The FCA is shipped with its own documentation for installation. See that documentation for complete instructions.

You need the following items to begin:

- FCA boards and the installation instructions provided by the manufacturer
- The server hardware manual for instructions on installing adapters
- Appropriate tools to service your server

The FCA board plugs into a standard PCI slot in the host system. See the hardware manual for instructions on plugging in boards.

Downloading Fibre Channel adapter firmware

Supported FCAs must be installed in the host server in order to communicate with the EVA. You can download the latest version of the FCA firmware at the following website:

http://h18006.www1.hp.com/storage/saninfrastructure.html

See the host-specific release notes for a list of supported FCAs.

Multipathing

Multipathing software provides a multiple-path environment for your operating system. More information is available at the following website:

http://h18006.www1.hp.com/products/sanworks/multipathoptions/index.html

NOTE:

Multipathing is not supported with Windows XP Professional x32.

HP StorageWorks Command View EVA and the Storage System Scripting utility

The Storage System Scripting utility (SSSU) is delivered as part of HP StorageWorks Command View EVA. The SSSU is a command line interface (CLI) that issues commands directly to the controller. You can locate HP Command View EVA including the SSSU at the following website:

http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html

Working with clusters

Clustering is connecting two or more computers together in such a way that they behave like a single computer. Clustering is used for parallel processing, load balancing, and fault tolerance.

The supported clustering software for Windows is Microsoft Cluster Server (MSCS).

For the latest version of the supported clustering software, see the applicable operating system connectivity release notes.

Be sure to install operating system-specific FCAs on each server in the cluster. See the documentation that came with the clustering software for more specific information.

2 Testing connections to the Enterprise Virtual Array

This chapter describes how to test connections between the operating system host server and the Enterprise Virtual Array. Virtual disks are set up and presented to your host server in order to test the connectivity and to begin using the disks.

NOTE:

Most of the following sections refer to HP Command View EVA. For more information about HP Command View EVA go to the following website:

http://www.hp.com/support/manuals Under Storage, click **Storage Software**. Then select **HP StorageWorks Command View EVA software** under Storage Device Management Software

Adding hosts

You can add a host using HP Command View EVA software. You must add each FCA installed in the host system for the host to work with the EVA. Perform the following procedure:

1. Collect information on world wide names (WWNs) for each FCA on your server. You need this information when selecting the host FCAs in HP Command View EVA.

   Gather the following information:

   a. Determine the active FCAs on the IBM AIX host by entering the following command:

   ```
   # lsdev -Cc adapter |grep fcs
   ```

   The following output is displayed:

   ```
   fcs0      Available 1H-08    FC Adapter
   fcs1      Available 1V-08    FC Adapter
   # lscfg -vl
   fcs0  fcs0           U0.1-P1-I5/Q1  FC Adapter
      Part Number.....80P4543
      EC Level.....A
      Serial Number.....1F4280A419
      Manufacturer.....001F
      Feature Code/Marketing ID...280B
      FRU Number.....  80P4544
      Device Specific.(ZM).....3
      Network Address.....10000000C940F529
      ROS Level and ID.....02881914
      Device Specific.(Z0).....1001206D
      Device Specific.(Z1).....00000000
      Device Specific.(Z2).....00000000
      Device Specific.(Z3).....03000909
      Device Specific.(Z4).....FF801315
      Device Specific.(Z5).....02881914
      Device Specific.(Z6).....06831914
      Device Specific.(Z7).....07831914
      Device Specific.(Z8).....20000000C940F529
      Device Specific.(Z9).....TS1.90A4
      Device Specific.(ZA).....T1D1.90A4
   ```

Device Specific.(ZB).....T2D1.90A4
Device Specific.(YL).....U0.1-P1-I5/Q1b.

b. Select the network address for the port WWN.

2. Use HP Command View EVA to add the host.

NOTE:

Adding hosts through HP Command View EVA software consists of adding each FCA installed in the host. Use the **Add Host** function to add the first adapter, but when you add subsequent adapters, use the **Add Port** function. Ensure that you add a port for each active FCA.

3. Ensure that the host FCAs have been added by inspecting the Host folder in the navigation tree of HP Command View EVA.

Creating and presenting virtual disks

To create and present additional virtual disks to the host servers:

1. Create a virtual disk on the EVA4000/6000/8000 by using HP Command View EVA.
2. Set values for the following parameters:
   - Virtual disk name
   - Vraid level
   - Size
   - Present to host (the host you just created)
3. Select a LUN number if you chose a specific LUN on the Virtual Disk Properties page.
4. Restart the server or rescan the bus.

Verifying virtual disks from the host

You can verify that operating system hosts can access the virtual disks created on the EVA4000/6000/8000 with HP Command View EVA. The host can recognize EVA devices either through a system restart or by rescanning the bus.

With Windows NT 4.0, you must restart the operating system for new virtual disks to be accessible. After you restart the system, you must partition, format, and assign drive letters according to standard Windows NT 4.0 conventions.

With Windows 2000, Windows Server 2003, and Windows XP Professional x32, you must rescan for new virtual disks to be accessible. After you rescan, you must select the disk type, partition, format, and assign drive letters or mount points according to standard Windows 2000, Windows Server 2003, and Windows XP Professional x32 conventions.

If you are unable to access the virtual disk, check the following:

- Verify all cabling to the switch, Enterprise Virtual Array, and host.
- Verify all firmware levels (check the Enterprise Virtual Array QuickSpecs and associated release notes for details).
- Ensure that you are running a supported version of the host operating system. For more information, see the host specific release notes.
- Ensure that the correct host is selected for this virtual disk in HP Command View EVA.
- Select Windows NT, Windows XP Professional x32, Windows 2000, or Windows Server 2003 for the virtual disk in HP Command View EVA.

Configuring virtual disks from the host

After you set up the virtual disks on the EVA4000/6000/8000 and have rescanned or restarted the host, follow the host-specific conventions for configuring these new disk resources. See the documentation that came with your server for specific instructions on setting up disk resources.

Configuring disks on Windows NT

Windows NT 4.0 requires that disks be partitioned, formatted, and assigned drive letters.

- Format the partition with NT File System (NTFS).
- Assign drive letters (each partition needs its own drive letter).

Use Disk Administrator to configure these virtual disks using standard Windows NT conventions.

Configuring Disks on Windows 2000, Windows Server 2003 and Windows XP Professional x32

Windows 2000, Windows Server 2003 and Windows XP Professional x32 requires the same disk setup as Windows NT 4.0 (partition, format, and drive letters).

Use the Disk Management utility within the Computer Management application to configure the virtual disks using standard Windows 2000 and Windows Server 2003 conventions.

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